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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,280	08/18/2003	Takahiro Kume	742158-08	2447

7590 03/16/2005

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EXAMINER

CHEVALIER, ALICIA ANN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,280

Applicant(s)

KUME ET AL.

Examiner

Alicia Chevalier

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/18/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending in the application, claims 19 and 20 are withdrawn from consideration.

Election/Restrictions

2. Applicant's election without traverse of Group I, claims 1-18, in the reply filed on February 8, 2005 is acknowledged.
3. Claims 19 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 8, 2005.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-12 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Konishi et al. (U.S. Patent No. 6,120,361).

Regarding Applicant's claim 1, Konishi discloses a polishing sheet (*polishing cloth*, col. 4, line 26) having an elastic plastic foam sheet (*foaming resin layer*, col. 4, line 28 and col. 8, lines 8-16) containing fine particles (*polishing particles*, col. 4, line 28). The elastic plastic foam

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sheet has a fine foam structure to be formed at a polishing face thereof by separating the fine particles (*col. 4, lines 55-59 and figure 5*).

Regarding Applicant's claim 3, Konishi disclose that the fine particles are contained in the polishing face of the elastic plastic foam sheet (*figure 5*).

Regarding Applicant's claim 4, Konishi disclose that the fine foam structure is opened at the polishing face (*figure 5*).

Regarding Applicant's claims 5 and 6, Konishi discloses that the particle diameter of the fine particles is in a range of from 0.6 μm to 5 μm , more preferably 1 μm to 3 μm , since the reference discloses that the particle diameter ranges from 50 to 300nm (*col. 3, lines 14-15*), i.e. .5 to 3 μm .

Regarding Applicant's claim 7, Konishi discloses that the fine particles are abrasive particles of at least one kind selected from a group comprising ceric oxide, zirconia, alumina-zirconia, aluminum oxide (alumina), alumina ceramics, silicon dioxide (silica), silicon carbide, diamond, ferric oxide, titanium oxide, manganese dioxide, calcium carbonate, and chromium oxide (*silica or alumina, col. 4, lines 33-40*).

Regarding Applicant's claim 8, Konishi discloses a polishing sheet (*polishing cloth, col. 4, line 26*) having an elastic plastic foam sheet (*foaming resin layer, col. 4, line 28 and col. 8, lines 8-16*) containing fine particles (*polishing particles, col. 4, line 28*). The elastic plastic foam sheet has first fine foamed cells to be formed by separating off the fine particles and second fine foamed cells that do not contain the fine particles at the polishing surface (*figure 5*).

Regarding Applicant's claim 9, Konishi discloses that the first fine foamed cells are opened at the polishing face (*figure 5*).

Regarding Applicant's claim 10, Konishi discloses that the space volume occupied by each of the first fine foamed cells is larger than that occupied by each of the second fine foamed cells (*figure 5*).

Regarding Applicant's claim 11, the first fine foamed cells has at least a size for allowing abrasive particles contained in a polishing liquid for secondary polishing to enter thereinto and exit therefrom (*col. 2, lines 35-42*).

Regarding Applicant's claim 12, the second fine foamed cells are deemed to have at least a size for allowing abrasive particles contained in a polishing liquid for secondary polishing to enter and exit therefrom (*col. 2, lines 35-42*).

Regarding Applicant's claim 15, Konishi disclose that the fine particles are contained at the polishing face of the elastic plastic foam sheet to be separable therefrom (*figure*).

Regarding Applicant's claims 16 and 17, Konishi discloses that the particle diameter of the fine particles is in a range of from 0.6 μm to 5 μm , more preferably 1 μm to 3 μm , since the reference discloses that the particle diameter ranges from 30 to 300 nm (*col. 4, lines 45-49*), i.e. 0.3 to 3 μm .

Regarding Applicant's claim 18, Konishi discloses that the fine particles are abrasive particles of at least one kind selected from a group comprising ceric oxide, zirconia, alumina-zirconia, aluminum oxide (alumina), alumina ceramics, silicon dioxide (silica), silicon carbide, diamond, ferric oxide, titanium oxide, manganese dioxide, calcium carbonate, and chromium oxide (*silica or alumina, col. 4, lines 33-40*).

6. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Zimmer, Jr. et al. (U.S. Patent No. 3,653,859).

Regarding Applicant's claim 1, Zimmer discloses a polishing sheet (*abrasive foam laminate, title and col. 1, lines 5-23*) having an elastic plastic foam sheet (*resilient structure, col. 2, line 24*) containing fine particles (*abrasive grains, col. 2, line 28*). The elastic plastic foam sheet has a fine foam structure to be formed at a polishing face thereof by separating the fine particles (*figure 2*).

Regarding Applicant's claim 2, Zimmer discloses that the plastic foam sheet is a continuously foamed body of polyurethane (*col. 3, line 47*).

Regarding Applicant's claim 3, Zimmer disclose that the fine particles are contained in the polishing face of the elastic plastic foam sheet (*figure 2*).

Regarding Applicant's claim 4, Zimmer disclose that the fine foam structure is opened at the polishing face (*figure 2*).

Regarding Applicant's claims 5 and 6, Zimmer discloses that the particle diameter of the fine particles is in a range of from 0.6 μm to 5 μm , more preferably 1 μm to 3 μm , since the reference discloses that the particle diameter ranges from 220 grit or finer (*col. 3, lines 14-15*), i.e. 66 μm or less.

Regarding Applicant's claim 7, Zimmer discloses that the fine particles are abrasive particles of at least one kind selected from a group comprising ceric oxide, zirconia, alumina-zirconia, aluminum oxide (alumina), alumina ceramics, silicon dioxide (silica), silicon carbide, diamond, ferric oxide, titanium oxide, manganese dioxide, calcium carbonate, and chromium oxide (*col. 3, lines 15-19*).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi in view of Zimmer.

Konishi is relied upon as described above.

Konishi further discloses that the foam is a urethane.

Konishi fails to disclose that the foam is polyurethane.

Zimmer discloses a polishing sheet (*abrasive foam laminate, title and col. 1, lines 5-23*) having an elastic plastic foam sheet (*resilient structure, col. 2, line 24*) containing fine particles (*abrasive grains, col. 2, line 28*). The elastic plastic foam sheet has a fine foam structure to be formed at a polishing face thereof by separating the fine particles (*figure 2*). Zimmer further discloses that the plastic foam sheet is a continuously foamed body of polyurethane (*col. 3, line 47*).

Konishi and Zimmer are analogous because they both disclose polishing sheets.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a polyurethane foam as taught by Zimmer as Konishi's foam because it is a well known foam in the art to use. Furthermore, finding the members of a class of prior art polymers which are best suited for a particular purpose is not a patentable invention. *Ex parte Fauser* (POBA 1953) 128 USPQ 156.

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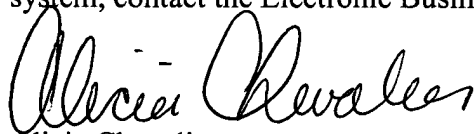
Regarding Applicant's claim 14, Konishi discloses that the continuously foamed body has many foamed cells and communication holes formed between the foamed cells, each of the communications holes having a diameter larger than those of abrasive particles contained in a polishing liquid for secondary polishing (*figure 5*).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Alicia Chevalier

3/11/05